

Clinical Trial Protocol

Iranian Registry of Clinical Trials

10 Jun 2026

Effectiveness of virtual rehabilitation versus therapeutic exercises in the balance training of lower limb among post-stroke patients

Protocol summary

Study aim

To check the effects of virtual rehabilitation versus therapeutic exercises in improving the balance of the lower limb of post-stroke patients.

Design

Randomized Control Trial

Settings and conduct

Physiotherapy Department of Abdullah Hospital
Lalamusa

Participants/Inclusion and exclusion criteria

Inclusion Criteria: • Age: 35 – 55 years. • Potential participants with 3 months post-stroke lower limb movement difficulties. • Ability to stand up with or without assistive devices • Patients with stable vital signs
Exclusion Criteria: • Subjects with severe hypertension. • Lower limb amputation. • Patients with a history of Deep venous thrombosis or Pulmonary embolism. • Auditory or visual dysfunction. • If the patient has severe receptive or expressive aphasia that affects the ability to communicate with or give consent. • Significant cognitive impairment such as the ability to follow two-level commands.

Intervention groups

Experimental group played video games using X-box and Kinect connected to the laptop. This group performed training for 35-40 minutes, 3 days/week for a total of 6 weeks times duration. The repetitions will increase according to the performance of the patient. Games were started from the basic level and the level was increased according to the patient's performance. The training was done under the supervision of a trained physiotherapist to avoid any hazards.

Main outcome variables

Balance

General information

Reason for update

Acronym

RCT

IRCT registration information

IRCT registration number: **IRCT20201021049094N2**
Registration date: **2022-12-10, 1401/09/19**
Registration timing: **retrospective**

Last update: **2022-12-10, 1401/09/19**

Update count: **0**

Registration date

2022-12-10, 1401/09/19

Registrant information

Name

Raheela Kousar

Name of organization / entity

The University of Lahore

Country

Pakistan

Phone

+92 53 3589155

Email address

raheelasaleem10@gmail.com

Recruitment status

Recruitment complete

Funding source

Expected recruitment start date

2022-08-19, 1401/05/28

Expected recruitment end date

2022-10-26, 1401/08/04

Actual recruitment start date

2022-08-19, 1401/05/28

Actual recruitment end date

2022-10-25, 1401/08/03

Trial completion date

2022-12-06, 1401/09/15

Scientific title

Effectiveness of virtual rehabilitation versus therapeutic exercises in the balance training of lower limb among

post-stroke patients

Public title

Effectiveness of virtual rehabilitation versus therapeutic exercises in the balance training of lower limb among post-stroke patients

Purpose

Treatment

Inclusion/Exclusion criteria

Inclusion criteria:

Age: 35 - 55 years. Potential participants with 3 months post-stroke lower limb movement difficulties. Ability to stand up with or without assistive devices and patients with stable vital signs.

Exclusion criteria:

Exclusion Criteria: Subjects with severe hypertension. Patients with a history of Deep venous thrombosis or Pulmonary embolism Lower limb amputation Auditory or visual dysfunction If the patient has severe receptive or expressive aphasia that affects the ability to communicate with or give consent Significant cognitive impairment such as the ability to follow two-level commands

Age

From **35 years** old to **55 years** old

Gender

Both

Phase

N/A

Groups that have been masked

- Participant

Sample size

Target sample size: **30**

Actual sample size reached: **30**

Randomization (investigator's opinion)

Randomized

Randomization description

Randomization by lottery method. Allocation concealment through a sealed envelope. In a bowl, we put closed slips of groups A and B. Participants fulfilling inclusion criteria randomly picked up groups and then allocated them through a sealed envelope.

Blinding (investigator's opinion)

Single blinded

Blinding description

Patient was not aware of the group treatment

Placebo

Not used

Assignment

Parallel

Other design features

Secondary Ids

empty

Ethics committees

1

Ethics committee

Name of ethics committee

University of Lahore, Gujrat Campus

Street address

University of Lahore, Gujrat campus near chenab river

City

Gujrat

Postal code

50700

Approval date

2022-08-18, 1401/05/27

Ethics committee reference number

REC/GRT/22/AHS-92

Health conditions studied

1

Description of health condition studied

Stroke: Stroke is a disease of the central nervous system produced by obstruction of the cerebral blood flow due to the occlusion (ischemic stroke) or rupture (hemorrhagic stroke) of a cerebral blood vessel. Afferent and efferent neural pathways are affected, and motor, sensitive and cognitive capabilities become impaired as a result of brain cortex injury. Motor and cognitive damage reduce their functional potential and independence.

ICD-10 code

ICD-10 code description

Primary outcomes

1

Description

Balance

Timepoint

Before intervention, Mid intervention and After intervention

Method of measurement

Berg Balance Scale

Secondary outcomes

1

Description

Range of Motion

Timepoint

Before intervention, Mid intervention and after intervention

Method of measurement

Through Goniometer

Intervention groups

1

Description

Intervention group: They group played video games using X-box and Kinect connected to the laptop. This group performed training for 35-40 minutes, 3 days/week

for a total of 6 weeks times duration. The repetitions will increase according to the performance of the patient. Games were started from the basic level and the level was increased according to the patient's performance. The training was done under the supervision of a trained physiotherapist to avoid any hazards.

Category

Rehabilitation

2

Description

Control group: They performed balance exercises such as the tandem walk, heel stand, forward striding, side step, single leg stand, and double leg stand for 35-40 minutes, 3 days/week for a total of 6 weeks times duration. The exercises were done under the supervision of the Physiotherapist.

Category

Rehabilitation

Recruitment centers

1

Recruitment center

Name of recruitment center

Abdullah Hospital Lalamusa

Full name of responsible person

Hana Pervaiz

Street address

Main Gt road Lalamusa near railway station.

City

Lalamusa

Postal code

50200

Phone

+92 304 0907209

Email

hanapervaiz7@gmail.com

Sponsors / Funding sources

1

Sponsor

Name of organization / entity

The University of Lahore

Full name of responsible person

Hana Pervaiz

Street address

Mohala kaira ward no.1 house no.B-115, Lalamusa
Pakistan

City

Lalamusa

Postal code

50200

Phone

+92 304 0907209

Email

hanapervaiz7@gmail.com

Web page address

<https://grt.uol.edu.pk/>

Grant name

The University of Lahore

Grant code / Reference number

REG/GRT/22/AHS-92

Is the source of funding the same sponsor organization/entity?

No

Title of funding source

Self

Proportion provided by this source

100

Public or private sector

Private

Domestic or foreign origin

Domestic

Category of foreign source of funding

empty

Country of origin

Type of organization providing the funding

Other

Person responsible for general inquiries

Contact

Name of organization / entity

The University of Lahore

Full name of responsible person

Hana Pervaiz

Position

Student

Latest degree

Bachelor

Other areas of specialty/work

Physiotherapy

Street address

Mohala kaira ward no.1 house no.B-115, Lalamusa
Pakistan

City

lalamusa

Province

punjab

Postal code

50200

Phone

+92 304 0907209

Email

hanapervaiz7@gmail.com

Person responsible for scientific inquiries

Contact

Name of organization / entity

The university of lahore

Full name of responsible person

hana pervaiz

Position

student

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Other areas of specialty/work

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Person responsible for updating data

Contact

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Sharing plan

Deidentified Individual Participant Data Set (IPD)

Undecided - It is not yet known if there will be a plan to make this available

Study Protocol

Undecided - It is not yet known if there will be a plan to make this available

Statistical Analysis Plan

Undecided - It is not yet known if there will be a plan to make this available

Informed Consent Form

Undecided - It is not yet known if there will be a plan to make this available

Clinical Study Report

Undecided - It is not yet known if there will be a plan to make this available

Analytic Code

Undecided - It is not yet known if there will be a plan to make this available

Data Dictionary

Undecided - It is not yet known if there will be a plan to make this available